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ABSTRACT

Selective research studies were examined to determine the competencies necessary for successfully mainstreaming handicapped students. An understanding was sought of: (1) the problems associated with competency development for mainstreaming situations: (2) the areas of training for both regular and special education personnel: and (3) the interrelationships among competencies in regular and special education. Competencies in specific abilities, skills, and techniques are identified. Administrator responsibilities are discussed with particular emphasis on dealing with teacher burnout resulting from the stresses that accompany mainstreaming situations. Suggestions are made for curricular reform in schools of education that will prepare special and regular teachers for mainstreaming and also for the development of significant inservice programs. (JD)

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Problems and Issues in Developing Competencies for Mainstreaming

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Running head: Competencies for Mainstreaming

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Abstract

Despite the passage of P.L. 94-142, the climate for acceptance of mainstreaming has changed very little. Contributing to this slow progress is confusion about the skills needed by the personnel involved in mainstreaming. A review of representative literature revealed limited, though significant, research outlining the competencies needed by administrators, teachers, and professors of special education; the changing role of special education teachers; and the interfacing of competencies needed by educational personnel in regular and special education. Results of the studies reported in this paper provide direction for future action in comprehensive preservice and inservice teacher education.

Problems and Issues in Developing Competencies for Mainstreaming

Mainstreaming, the "inaccurate code name" (Turnbull & Turnbull, 1978, p. 137) given to the concept of the least restrictive appropriate educational placement of handicapped children, no longer is merely a goal of special education. It is now a mandate of law and, as such, is the force behind much of today's furor in both special education and regular education. Mainstreaming is the most significant and pervasive major legal development of the 1970's in that it extends the principle of egalitarianism to handicapped children and affects every aspect and level of public education.

The Education for All Handicapped Children Act of 1975 (P.L. 94-142) is unique in that the legislation addresses administrative responsibilities, fiscal concerns, and instructional programming. The principles incorporated in P.L. 94-142 include the concept of zero reject, procedural due process, nondiscriminatory classification, an individualized educational program, and the least restrictive educational placement, also termed mainstreaming. To say that mainstreaming has created problems for regular as well as special education would be a gross understatement. Although it has been twelve years since Dunn (1968) questioned the appropriateness of special class placement for mildly handicapped youngsters, the climate for acceptance of mainstreaming has changed little (Alexander & Strain, 1978; Moore & Fine, 1978). Indeed there is some indication that resistance

Turnbull, H. R. & Turnbull, A. Free approrpiate public education: Law and implementation. Denver: Love Publishing Co., 1978.

Umbreit, J., Karlan, G., York, R., & Haring, N. G. Preparing teachers of the severely handicapped: Responsibilities and competencies of the teacher trainer. Teacher Education and Special Education, 1980, 3(2), 57-72.

Vaughan, M., & Scholl, G. Personnel development for state consultants for the visually handicapped. Teacher Education and Special Education, 1980, 3(2), 47-51.

Weintraub, F., Abeson, A., Ballard, J., & LaVor, M. (Eds.) Public policy and the education of exceptional children. Reston, Virginia: The Council for Exceptional Children, 1976.

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to integration of handicapped children into regular programs is becoming more widespread, as unforeseen problems surface to bewilder administrators and teachers alike (Dixon, Shaw & Bensky, 1980; Ryor, 1978). Much of the discontent stems from fear and lack of clarification of the responsibilities of and competencies needed by school administrators, regular education teachers, and special education personnel (Byford; 1979; Dixon, et al., 1980; Paul & Warnock, 1980; Perkins, 1979).

Since the passage of P.L. 94-142, a significant portion of the educational literature has dealt with mainstreaming (Cockrane & Westling, 1977; Jones, Gottlieb, Guskin, & Yoshida, 1978). Limited research, however, has been conducted to determine the specific competencies needed by the involved personnel in order to implement mainstreaming successfully (Byford, 1979; Paul & Warnock, 1980). Furthermore, little recognition has been given to the interfacing of competencies needed by special educators, regular educators (both neophytes and veterans), and administrators.

A number of scholarly treatments of mainstreaming (Berliner, 1979b; Semmel, Gottleib, & Robinson, 1979; Turnbull & Turnbull, 1978; Weintraub, Abeson, Ballard, & LaVor, 1976), competency based teacher education (Blackhurst, 1974; Houston, 1974; Medley, 1979, & 1977), and comprehensive systems of personnel development (Burrello & Baker, 1980) can be found in the literature. This paper, however, is limited to the presentation of the results and implications of selective research studies that impact on the development of competencies needed for the integration of handicapped students into the mainstream of education that help provide direction for

future action in teacher education. A review of the selected literature assists in understanding the current status of educator competencies for mainstreaming; the problems associated with competency development for mainstream situations; the areas of training which should be included in comprehensive teacher education programs for both regular and special education personnel and the interrelationships among competencies in regular and special education.

Review of Research

Special Education

Project IEP (Safer, Morrissey, Kaufman, & Lewis, 1978), a study of special education teachers, was designed to address an aspect of P.L. 94-142 that has caused consternation and confusion about the role and competencies needed by special education teachers to assure successful mainstream experiences for handicapped children. Conducting research in 31 school districts in four states, Safer and her colleagues found that the role of special education teachers and the skills needed by them to comply with the IEP (individual education program) requirement to be quite different from those attendant upon a self contained special education class. Project IEP revealed that special education teachers spend less time in direct instruction of children, expend a greater proportion of time and effort in activities that are noninstructional in nature, have more involvement with teachers in the regular education program, share with regular education teachers the responsibility for

classroom activities, experience an increased accountability to non-educators, find increased demands on teacher time, and need new requisite skills.

Although Safer et al. (1978) caution against drawing conclusions based on their data, there does appear to be a need for changing the way pupil time is viewed and allocated. Students should be scheduled in far better ways than the present lock-step, specified block-of-time period. Worthy of consideration is differentiated modular scheduling, such as, three hours, one day a week or two hours, three times a week instead of one hour a day at 10 a.m. every day. Any new system of time allocation adopted must build in flexibility or it, too, will deteriorate into a new, but just as rigid, lock-step formula.

Moreover, the amount of time a student spends in the presence of a teacher is not as important as what is occurring during that time. Berliner's (1979a) observational studies of fourth and fifth grade classes lead to the conclusion that academic learning time (ALT), similar to Bloom's (1976) time on task and Rosenshine's (1979) academically engaged minutes, is not the same as allocated time or prescribed time. Though students may be in the room with a teacher, they are not functionally engaged in learning unless they are involved with instructional activities or materials that are at an easy level of difficulty. The competencies needed to motivate students and to maintain an optimum level of ALT needs to be a part of the repertoire of the special teachers, especially when they are engaged in the education of handicapped students who have an overlay of behavior problems.

Teacher time, likewise, should be adjusted. If special and regular education teachers are going to be held jointly responsible for the education of handicapped children, regularly scheduled meetings in which teachers discuss instructional objectives, resources, and strategies must be integrated into the regular teaching day. Articulation and coordination are not possible if teachers must meet on a hit-miss basis during hurried lunch breaks, at busy teaching times, or at the end of an exhausting and fully scheduled day.

Haring (1978) classified 322 informational and 128 performance competencies developed by Horner (1977) for teachers of severely handicapped students into nine competency areas which are applicable to teachers of the mildly handicapped as well. These are:

1. Techniques for managing severe [or mild] behavior problems;
2. Procedures for developing teacher-made instructional materials;
3. Engineering physical properties of a classroom;
4. Basic principles of the acquisition of operant behavior;
5. Basic principles and techniques of measurement;
6. Basic principles of imitation training, generalization, discrimination, and maintenance;
7. Basic principles of task analysis;
8. Development and implementation of instructional programs; and
9. Procedures used to develop curriculum sequences. (Haring, 1978, p. 412)

Stamm (1980) discusses "four generic teaching competencies" needed by special educators. Drawing upon his personal experience in the administration of special education programs and a review of several hundred individualized educational plans, local education agency practices, and data obtained from a survey of special and regular education teachers, Stamm (1980) determined the following competencies as important, but mostly absent, in the repertoire of many special and regular educators:

> Ability to individually assess and diagnose specific skill strengths and weaknesses in order to develop appropriate instructional programming;
>
> Ability to discriminate between assessment for classification purposes and for instructional purposes;
>
> Ability to design effective instructional programs, i.e., specify learning requirements (goals) and instructional objectives;
>
> Ability to systematically analyze instructional objectives (task analysis) and specify alternative program strategies to achieve them;
>
> Ability to evaluate learner outcomes; and
>
> Ability to work effectively with other professionals and parents (communication and consulting skills).

These competencies can be acquired by special educators, states Stamm, if the needed changes in professional preparation programs are implemented and "not just written about" (1980, p. 55). "What is taught in university- and college-based special education programs has little transfer to the

classroom" because faculty are "rewarded for theorizing" about competencies instead of demonstrating them (Stamm, 1980, pp. 55-56).

Lilly (1974) proposed 25 competency statements in seven categories:

1. Defining and assessing problems;
2. Solving problems;
3. Reinforcing and controlling behavior;
4. Measuring progress;
5. Requesting help;
6. Involving others in the classroom, and;
7. Evaluating one's own performance.

Special education teachers also should be taught to relinguish "total control" over educating handicapped children which they have enjoyed in the past; skills for sharing have to be learned and practiced, and the "territorial behaviours" and possessiveness which characterize many special education teachers must give way to trust and cooperation (Paul & Warnock, 1980, p. 25). One of the indices of effective mainstreaming programs is the "extent to which regular and special class teachers interface and share responsibility for the child's education program" (Jones et al., 1978, p. 594). Skills in interpersonal relations are also needed for the successful interacting of regular and special education teachers, thus avoiding teachers' feelings of inadequacy or inferiority. Finally, increased accountability to non-educators requires that special education teachers use jargon free English for communicating with others effectively.

Regular Education

Teachers in regular education programs also need new skills and competencies. Repeatedly, research suggests that a vast majority of regular class teachers believe themselves to be equipped poorly for working with handicapped students. Assessing perceptions of regular classroom teachers concerning their abilities for teaching handicapped students, Gickling and Theobold (1975) found that 85 percent felt they lacked the necessary skills for teaching handicapped children.

Shotel, Iano, and McGettigan (1972) noted that regular classroom teachers are generally resentful and negative about the placement of exceptional children in their classes. They, therefore, do little to integrate the handicapped child; nor do they alter their own instructional strategies to accommodate educational needs that are discrepant from those the majority of students in their classes possess.

In another study of what regular class teachers believe to be concerns, instructional strengths or weaknesses, and training needs associated with mainstreaming, Alberto, Castricone, and Cohen (1978) found that teachers do not find survey courses to be helpful because they are viewed as being too broad and lacking in specific knowledge and skills that teachers view as important. Coursework in characteristics of exceptional children, with sufficient detail to be useful, was highly recommended. Recognized as training needs of teachers were individualization of instruction, interpretation of test results, remediation of instructional deficits, and classroom and behavior management. Training in these areas

preceding the placement of handicapped children in regular classes was seen as vital in order to avoid doing a disservice to both children and teachers. Concluding that there is a need for more research on the development and establishment of the competencies needed by all educators in the mainstream situation, Alberto et al. (1978) recommend a model course developed as a result of their investigation which incorporates the skills mentioned above.

Discovering no prior research efforts or empirical data on competencies needed by elementary teachers for mainstreaming, Redden and Blackhurst (1978) conducted an investigation to identify specific competencies believed by regular elementary teachers to be requisite to effective mainstreaming of handicapped children. Identified were 271 specific tasks relating to mainstreaming within 32 competency statements falling into six broader categories, called functions.

The six competency functions identified were:

1. Ability to develop orientation strategies for mainstream entry;
2. Ability to assess needs and set goals;
3. Ability to plan teaching strategies and use of resources;
4. Ability to implement teaching strategies and use resources;
5. Ability to facilitate learning; and,
6. Ability to evaluate learning.

Of special significance in this study is teachers' emphasis on orientation skills and competencies required for overall good teaching. Though referred to, knowledge of exceptionalities was not a primary concern as

was the need to simply be a skillful teacher.

The recognition that, to be effective, teachers need to have access to skill development courses in "diagnostic, remediation and behavior management techniques" inspired Byford to survey 154 higher education institutions in the Washington, D.C., area (Region III, U.S. Office of Education) to determine whether or not they had made adjustments in their teacher training programs to include special education technique courses for regular education teachers (1979, p. 23). The results indicate that a beginning has been made, but that "the task of developing a list of trainable and measureable competencies for teachers... needs to be continued" (p. 23). In response to mainstreaming implications, some adjustments in the preparation of regular classroom teachers can be found; however, "widespread attempts are not being made at the undergraduate, graduate, or inservice levels for training or retraining regular classroom teachers" in the instruction of exceptional students (Byford, 1979, p. 24).

Using criteria developed from "the related scholarship in mainstreaming," Byford (1979) designed a regular teacher training model that includes skill areas subsumed under broad based categories. These are:

> Diagnostic skills: the ability to use case histories, clinical observation techniques, the assessment of learning modalities, and formal and informal testing skills;

> Remediation skills: individualizing instruction, appropriate selection of teaching materials, varying instructional methods, and effective use of supportive services; and
> Behavior management: understanding social and emotional problems, knowledge of affective skills development, understanding the relationship of self-concept and learning, and possessing knowledge of personal adjustment mechanism. (p. 23)

In its competency based teacher training program, the University of Vermont is attempting to delineate the competencies needed by regular education teachers involved in mainstreaming (Robie, Pierce, & Burdett, 1979). The program, called Responsive Teacher Program, was inspired by the Vermont special education 10 year plan and involves an undergraduate concentration in special education, for elementary and secondary education majors, with the goal of providing regular classroom teachers with special education skills. Except for the most profoundly handicapped, the Vermont special education 10 year plan (to be fully effective in 1983) dispenses with labels and segregated special education classes and determines pupil eligibility for special services on the basis of learning deficiency (Robie et al., 1979).

Professors in Special Education

Drawing upon earlier research which indicated the possibility of identifying competencies that students and professors perceive as necessary to effective professional functioning, Ingram and Blackhurst

(1975) sought to determine the teaching and advising competencies needed by special education professors. Identified were 78 competencies for effective instruction in four major categories (professional knowledge skills, preparation skills, presentation skills, and evaluation skills) and 42 competencies for effective advising in three major categories (professional knowledge skills, management skills related to advising special education college students, and interpersonal skills).

After much needed replication studies, these competency statements may conceivably form the basis for a special education doctoral program preparing future college professors with effective teaching and advising skills, thus addressing Hammer's (1965) contention that college professors are ineffective teachers. Furthermore, the results of this study have implications for higher education in all the disciplines, not just in special education, with respect to program design, faculty evaluation, and staff development.

Concentrating on the presentation skills aspect, Kulik and Kulik (1979) reviewed fifty years of research on alternatives to the lecture method in college teaching, summarized the findings of research on personalized systems of college instruction, and posited effective components of college teaching. In competency terms, Kulik and Kulik (1979) found that college teachers need skills similar to those of elementary and secondary teachers in preparing individualized educational plans. The components of effective college teaching identified are: frequent quizzing on course content, immediate feedback on the accuracy of answers to

examinations, and remediation of dificient areas if a specified level of mastery is not reached with a predefined level of excellence. As an alternative to the lecture method of teaching, Keller's Personalized System of Instruction is recommended because students learn more, react favorably to the system, and have superior long-range recall of course content.

Stamm, critical of special education teacher preparation programs, finds that "many... need restructuring" (1980, p. 53). Furthermore, Stamm (1980) claims that teacher educators must have the ability to model the competencies they are attempting to teach special educators. Umbreit, Karlan, York and Haring (1980) hold that teacher trainers, in addition to the competencies previously stated, must also be skilled in securing additional local, state, and federal funds to help underwrite the cost of training special education personnel because the trend is to decrease federal funds currently available or to maintain the dollar amount while the economy continues toward unprecedented inflation.

Inservice Education

Preservice teacher training programs do not address the issue of competencies needed by veteran staff. Many teachers attempt to find appropriate training programs but experience difficulty in locating or gaining acceptance into programs that will help them acquire the skills needed to work successfully with handicapped youngsters (Dixon, et al., 1980). Inservice education is an obvious alternative, and the

implementation of the least restrictive placement does require substantial inservice training efforts.

Umbreit et al. (1980) recommend that the content of each inservice training program be geared to the specific needs of the participants, but recognize that certain competency areas appear in nearly every needs assessment and should receive attention. Topics repeatedly requested are:

1. Assessment of pupils;
2. Selection of curricular materials;
3. Materials and equipment;
4. Evaluation of pupil progress;
5. Use of classroom aides;
6. Interdisciplinary expertise;
7. Classroom organization;
8. Maximizing instructional time;
9. Maintenance and generalization of skills;
10. Physical care and management of students;
11. Behavior problems;
12. Restrictiveness of environments; and
13. Interactions between handicapped and nonhandicapped students. (p. 65)

Inservice education can not be viewed as a panacea, however. It is froth with problems about effectiveness, appropriate delivery systems, and evaluation. Although much has been written about inservice education, the literature suffers from a lack of clear concepts and definitions

(Cruickshank, Lorish & Thompson, 1979). An indepth review of the literature by Cruickshank et al. (1979) led to the conclusion that "although we write endlessly about inservice education, the writing, almost exclusively, is rhetorical and more ornamental than useful" (1979, p. 27).

Recognizing the magnitude of the need for meaningful inservice, the Bureau of Education for the Handicapped established inservice training as a national priority. Recently published is a compilation of inservice projects of the Council for Exceptional Children (CEC) and the National Inservice Network (NIN) at Indiana University (McCaffrey, Strout, Burrello, & Cline, 1979).

NIN is a network of projects concerned with the multiple facets of delivering inservice education and training throughout the United States. Initially concerned with the short-term objective of increasing the capacity of individual projects to succeed, the long-term goal is to create a structure for providing an information base, developing successful strategies, and sharing learnings and resources with the entire universe of potential users.

Working in close cooperation with other dissemination projects, NIN is also coordinating its efforts with other technical assistance projects. NIN has involved and will continue to involve administrators and regular classroom teachers in the planning and implementation of this national system of personnel development.

Preliminary results of most of the projects indicate that training at the school site and at the school building level is effective because

teachers feel they get better assistance on their individual priority concerns (McCaffrey et al., 1979, p. 22). Still needed is on-site and on-going, follow-up sessions for reinforcing skills and helping teachers solve problems not anticipated or addressed in the inservice training sessions. The teacher who needs help resolving a problem on Monday morning can not wait until the next inservice session to receive assistance.

Inservice may also be the vehicle for addressing another significant issue, burnout. Burnout, becoming physically or emotionally exhausted because of the stress of interpersonal contact or excessive demands on energy, strength, or resources (Freudenberger, 1977; Maslach, 1978; Weiskopf, 1980), has become a serious problem for teachers who work with exceptional children. Indicators of staff burnout are the high turnover rate and the resulting increase in administrative time devoted to recruiting, hiring and orienting new staff personnel; the increase in role confusions, resentments, and problems between and among regular teachers, special education teachers, and administrators; and the open resistance to federal, state, and local rules and regulations addressing the education for handicapped students (Dixon et al., 1980, p. 30).

Research indicates that burnout is related to the individual's inability to cope with continual stress (Weiskopf, 1980). Cooper and Marshall (1976) identified three different sources of stress impacting on burnout: personal characteristics, work related stress (i.e., work overload, time pressures, responsibility, poor interpersonal relations, physical danger), and non-work related stress (individual and family problems). Weiskopf (1980) determined that teacher burnout definitely

exists and that stress is directly associated with this phenomenon. Therefore, inservice must be provided so that teachers can develop the skills and competencies needed to recognize the onset of burnout and to prevent its takeover. Suggestions recommended by Weiskopf (1980, pp. 21-22) for preventing burnout translated into competency statements are:

Ability to recognize emotionally and physically stressful events;

Ability to plan student programs compatible with identified handicaps;

Ability to delegate responsibility for paperwork and nonteaching duties to paraprofessionals or volunteers;

Ability to schedule activities and events so that prolonged direct contact with children is avoided;

Ability to debrief and share experiences and feelings;

Ability to participate and develop expertise in hobbies or other areas apart from the job from which ego enhancement can be obtained;

Ability to relax and work off tension or boredom; and

Ability to realistically assess success.

Bensky, Shaw, Gouse, Bates, Dixon and Beane (1980) found that unfamiliar and changed job responsibilities and expectations associated with compliance with P.L. 94-142 to be related to the development of stress, in varying degrees, in regular classroom teachers, special classroom teachers, and resource room teachers. "The overall conclusion that can be drawn from the data is that... administrators and planners should anticipate a

continuous buildup of stress and, possibly, resistance with respect to the specific tasks required by the law" (Bensky et al., 1980, p. 28). To mitigate the effects of stress, they recommend

1. Skill development for teachers in diagnosis; assessment; use of in-class, nonstandardized and standardized instruments; direct teaching skills; stress coping skills;
2. Role clarification; and
3. Inservice education.

Educational Administration

Administrators also are finding a significant relationship between staff burnout and stress. Although the administrator may not have total control over school climate and working conditions, as the educational leader he plays a "key role in determining what that climate will be" (Dixon et al., 1980, p. 31). Administrators, therefore, must develop the ability to identify and assist staff members who are experiencing job related stress, understand that stress is likely to affect staff differentially, and set up clear role expectations for teachers and other education personnel (Bensky, et al., 1980 p. 27).

Dixon et al. (1980) compare the role and function of the administrator to the IEP (individualized education program) development process. Competencies which can be inferred are:

Ability to observe, collect data on, and diagnose environmental conditions influencing stress development in individual educators;

Ability to plan, design, and implement intervention strategies to reduce stress;

Ability to individualize treatment approaches appropriate to specific staff members; and

Ability to evaluate the effectiveness of strategies employed.

Nevin's study (1979) of the competencies needed by school administrators to implement special education programs under the requirements of P.L. 94-142 identified the following "competency statements" as essential to their job responsibilities:

1. Knowing due process requirements;
2. Interpreting federal and state laws;
3. Using appropriate leadership styles;
4. Showing that records comply with due process and confidentiality requirements;
5. Resolving conflicts among program personnel;
6. Using evaluation data to make program revisions, when needed, for exceptional learners, and
7. Determining staff function and qualifications for educational programs for handicapped learners.

Nevin also generated a list of training needs (defined as a positive discrepancy between required proficiency and actual proficiency, as viewed by the administrators) related to competencies: acquiring knowledge of current trends, research, and programs for handicapped; maintaining data based records; planning programs; interpreting mandates; assisting in

program design; assessing needs of handicapped students; and employing evaluation information for program changes.

Competencies, in two task areas, identified by Vaughan and Scholl (1980) as necessary to the effective functioning of vision consultants which are equally applicable to all educational leaders are:

Task - Develop administrative skills.

Competencies

Ability to select appropriate organizational patterns of instruction for visually [or other] handicapped pupils;

Ability to function as a change agent;

Ability to engage in long and short-range planning;

Ability to plan and implement a professional development plan for their state;

Ability to work effectively with other professionals such as instructional materials personnel, college/university personnel, etc.

Task - Increase knowledge of educational needs of visually... handicapped pupils.

Competencies

Knowledge of past, present and future trends in education of the handicapped;

Ability to maintain... consultant as primarily involved in educational programming (Vaughan & Scholl, 1980, p. 50).

Direction for the Future

Consistently the literature reveals that preservice programs for special and regular education teachers need to be modified (Medley, 1979). For such to be effective, solid, well-grounded, cumulative research is needed. The problem in education is not one of insufficient research, rather it is that such research "has failed to build over the years. This year's study (findings)... may contradict last year's," with no one able to explain "why the two investigations yield opposite results" (Fleischmann Report III, 1973, p. 197). According to Medley, research on teacher education to date has had little impact because so many of the findings are "irrelevant or inconsistent, or both" (1979, p. 16). To develop a well-documented body of scientific knowledge about the competencies needed for successful teaching, educator-researchers might adopt techniques similar to those used by their colleagues in the fields of agriculture or engineering or medicine where slow, but highly effective, processes for accumulating and building upon knowledge have been employed for centuries, long before the emergence of computer-assisted research.

The medical model, for example, requires strict adherence to prescribed research procedures before support for a proposed remedy is given serious consideration. Typically, doctors present papers on unique or interesting cases at local and state medical association meetings. The best of these usually proceed to presentation at national meetings. These medical papers offer the most detailed observations the physician can write about the patient, his symptoms, his diagnosis, the treatment

used, and the patient's condition upon completion of the treatment and at a later follow-up period. Descriptions are specific, making replication studies possible. Other doctors, interested in the same problem, try the remedy on their patients; they attempt to exactly duplicate the "cure" as presented in the original paper. They document their efforts and collaborate with peers and other related professionals, and thus begins the laborious process of building a specialized body of knowledge about a particular condition and its presumed remedy. After a sufficient number of cases are reported with similar findings, a causal relationship is postulated. This hypothesis is then tested repeatedly until it can be affirmed or negated. A basis is thereby laid for continued research in one specific area. Much of the testing and retesting takes place in a "teaching" hospital which becomes the center of applied research as well as the locus of medical service to patients and on-the-job training for new, unseasoned doctors. (For a comprehensive treatment of the subject of teaching hospitals, see Knowles, 1966).

A similar model can be used in researching the competencies needed to teach and work with handicapped students. Common guidelines can be established for conducting and reporting the results of research, thus avoiding partial and incomplete reports which do more to confuse than to clarify (Carlberg & Kavale, 1980; Jones et al., 1978). Instead of the piecemeal studies that are generally conducted in education which have no relationship to either earlier findings or subsequent research, coordinated long-term studies can be carried out (Light & Smith, 1971;

Fleischmann, 1973). Ecological or naturalistic research can be conducted (Scott, 1980); clinical inquiry can supplement the classical experiment as a research methodology (Fisher & Berliner, 1979).

An essential element in the teaching hospital is the practitioner, the physician; likewise, in education, the center of the applied research efforts must be the educational practitioner, the teacher (Jones et al., 1978; Paul & Warnock, 1980). The teacher in the school corresponds to the doctor in the hospital. Supported by university personnel, knowledgeable about research design, testing techniques, and observational and recording devices, the classroom teacher can observe and record what is effective or ineffective, as the case may be, in specific instances; the skills that were learned but are not helpful in working with the handicapped that should be eliminated from the list of competencies to be achieved; and the skills that are needed but were not achieved or were not considered necessary in the university training program. In conjunction with these efforts, an interdisciplinary university team can observe, discuss, and revise preservice programs for special and regular education teachers, administrators, school psychologists, and other school personnel.

Such a process would make possible the building of a specialized body of knowledge about competencies needed by personnel involved in the education of handicapped youngsters, just as medicine has built a knowledge base about specific illnesses and diseases. Although an adaptation of the medical model is posited for the testing of hypotheses about the

efficacy of certain teaching practices and for the accumulation of a research based body of knowledge about competencies needed for successful mainstreaming, it is not recommended as a method for viewing students or for neatly classifying children into preconceived categories. The assumption of illness in medicine's being equivalent to the absence of learning in education is not intended nor implied by the recommendation. Conversely, it should be avoided.

It is also possible to consider the establishment of a new kind of school, the equivalent of the "teaching" hospital, to advance the science and art of education. Such an institution has been proposed (Fleischmann Report III, 1973, pp. 187-199). Called "professional schools," these institutions are seen as serving the complementary functions of demonstration teaching, on-the-job teacher training, and applied research. The schools would be fully funded by the state and administered cooperatively by a local university and a local school board. Faculty would be appointed from many disciplines, not merely from departments of education, and research activities would not center around faculty interests and preferences but around the effectiveness of instructional strategies. These professional schools could be the sites for field experiences for teacher trainees and internship placements for new, untested, first-year teachers, as the hospitals are the training places for new medical doctors. As the "teaching" hospitals do, the professional schools would accept tentative hypotheses about instructional efficacy reported by teachers in the regular schools and would subject these to the research process to see if they survive rigorous scrutiny.

Carrying the analogy further, it is recommended that professional preparation programs for all teachers be extended from four to five years with special education teachers required to participate in a sixth year internship program. Similar suggestions can be found in the writings of Stamm (1980) and Corrigan (1978).

The apparent need for meaningful staff development of veteran teachers, at their home sites, addressing their specific problems, must be given attention. Recognition of this aspect of inservice has significant implications for institutions of higher education. New delivery systems must be developed, and interdisciplinary teams must prepare change agents and resource personnel skilled in helping teachers modify their teaching strategies. (For example, the adult population needs the educational services currently made available predominantly to those under the age of twenty-one. Could not the extended family concept be incorporated in the school classroom? The medium of television needs to be used to reach prospective students [any age learner] who cannot, for any number of legitimate reasons, travel to school or college buildings or who live in sparsely populated areas where educational offerings are not easily found.) Researchers in inservice education should consider using the model promulgated by Cronbach and Snow (1977) which considers content, situational, and participant contingency variables in determining the efficacy of inservice programs (Cruickshank, 1979, pp. 30-31). The application of this model would permit the identification of complex relationships among the characteristics participants possess, the context wherein the characteristics exist, the content presented

in the inservice, the type of experience provided, and the characteristics of the inservice leaders.

Moreover, inservice and preservice programs must focus on the attitudinal and feeling aspects of teachers as well as on skills and competencies (Meyen, 1978). Exploring attitudes and feelings in teacher education is of equal importance to acquiring a body of knowledge and skills; attitudes and feelings affect the teaching-learning process and the delivery of education in the classroom (Jones, et al., 1978; Williams & Algozzine, 1979).

Finally, if mainstreaming is to fulfill its destiny and provide the best available alternative for handicapped children, the school administrator's fears, concerns, and training needs must be given serious and immediate attention (Herda, 1980). In addition to those cited previously relative to mainstreaming, educational administrators will need to develop competencies in the business and financial aspects of education as they are faced with the task of finding "human, material, and financial resources to create least restrictive environments for handicapped, and in many cases, nonhandicapped students as well" (Herda, 1980, p. 8). Economizing, stretching available dollars, without adversely affecting mainstreaming demands skills heretofore considered helpful but not essential to school administration. However, in the future "skills such as forecasting (determining the long-range costs of projected programs), cost analysis (identifying the cost of various aspects of programs), cost effectiveness (analyzing cost versus returns) will be used more and more

frequently, and will become prized skills" (Duhamel & Johnson, 1979, p. 43).

The school administrator is the key to success in mainstreaming as he or she can provide support and encouragement instead of stumbling blocks and indecision (Cochrane & Westling, 1977). Clearly, if mainstreaming is to be more than an administrative directive, it must be supported by the administration. And if mainstreaming is to be effective, retraining needs of educational administrators must be given high priority.

Although there is abundant evidence that educators have really "come a long way" since the passage of P.L. 94-142, there is little doubt that much more is needed. Many options are available, but all alternatives require the cooperative efforts of school district and university personnel, the support of top level university and school district administration, and continuous research and evaluation.

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